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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/785,759	02/16/2001	Ranjit Gharpurey	TI-31261	2970

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EXAMINER

YUN, EUGENE

ART UNIT PAPER NUMBER

2682

DATE MAILED: 12/01/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/785,759

Applicant(s)

GHARPUREY, RANJIT

Examiner

Eugene Yun

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 and 4. 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Dent (US 5,983,077).

Referring to Claim 1, Dent teaches a radio, comprising:

a duplexer 301 (fig. 3) ;

a transmitter section 300 (fig. 3) coupled to the duplexer, the transmitter section transmitting at a center frequency; and

a receiver section coupled to the transmitter section, the receiver section including a first down conversion section 302 (fig. 3) comprising first and second mixers 309 (fig. 3), said first and second mixers receiving a first local oscillator (LO) signal having a frequency equal to the center frequency of the transmitter section or a sub-harmonic thereof (see col. 11, lines 18-20 where  $F_{txoff}=0$ ).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Borrás et al. (US 5,465,409).

Referring to Claim 8, Dent teaches a method for minimizing the interference caused by the transmit signal produced by the transmit section on the receiver section of a radio, the receiver section having a first down conversion section 302 (fig. 3), the method comprising the steps of:

providing a local oscillator (LO) signal to the first down conversion section of the receiver, said LO signal having a frequency equal to the center frequency of the transmit signal or a sub-harmonic thereof (see col. 11, lines 18-20 where  $F_{txoff}=0$ ); and filtering the output of the first down conversion section of the receiver 303a (fig. 3).

Dent does not teach the radio as a frequency domain duplexed (FDD) radio. Borrás teaches the radio as a frequency domain duplexed (FDD) radio (see ABSTRACT). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Borrás to said method of Dent in order to increase the cost effectiveness of the radio.

Referring to Claim 2, Dent does not teach the radio as a frequency domain duplexed (FDD) radio. Borrás teaches the radio as a frequency domain duplexed (FDD) radio (see ABSTRACT). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Borrás to said method of Dent in order to increase the cost effectiveness of the radio.

Referring to Claim 12, Dent also teaches down converting the high pass filtered output using a second down conversion section 303 (fig. 3).

5. Claims 3, 5, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent and Borrás in view of Minami (EP 0508401 "IDS").

Referring to Claim 3, the combination of Borrás and Dent does not teach a first high pass filter coupled to the output of the first mixer and a second high pass filter coupled to the output of the second mixer. Minami teaches a first high pass filter 31-1 (fig. 1) coupled to the output of the first mixer and a second high pass filter 31-2 (fig. 1) coupled to the output of the second mixer. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Minami to said method of Dent in order to reduce the size of the radio while enhancing reliable operations.

Referring to Claim 9, the combination of Borrás and Dent does not teach high pass filtering the output of the first down conversion section. Minami teaches high pass filtering the output of the first down conversion section (see 31-1 and 31-2 of fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Minami to said method of Dent in order to reduce the size of the radio while enhancing reliable operations.

Referring to Claims 5 and 11, Minami also teaches cascaded single pole high pass filters (fig. 1).

6. Claims 4, 6, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent, Borrás, and Minami in view of Watkinson (US 6,271,737).

Referring to Claim 6, the combination of Dent, Borrás, and Minami does not teach the high pass filters having an output and a set of two mixers attached to each of the high pass filters. Watkinson teaches the high pass filters 24 (fig. 1) having an output and a set of two mixers 30 and 32 (fig. 1) attached to each of the high pass filters. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Minami to said method of Dent in order to better enhance the performance of the radio.

Referring to Claims 4 and 10, Watkinson also teaches the high pass filters comprising integrated DC blocking capacitors (figs. 1 and 3).

Referring to Claim 7, Watkinson also teaches the sets of two mixers attached to the high pass filters having an output, the first mixer providing an in-phase component 30 (fig. 1) at its output and the second mixer providing a quadrature component 32 (fig. 1) at its output and further comprising:

a first adder 46 (fig. 1) having a first input for receiving the output of the second mixer connected to the first high-pass filter, and a second input for receiving the output of the first mixer connected to the second high pass filter, said first adder having an output for providing an in-phase component base band signal; and

a second adder 46 (fig. 1 considering the device starting at mixer 18 is duplicated and both connected to the device in the Dent reference) having a first input for receiving the output of the first mixer connected to the first high-pass filter, and a second input for

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receiving the output of the second mixer connected to the second high pass filter, said second adder having an output for providing a quadrature component base band signal.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Yun whose telephone number is (703) 305-2689. The examiner can normally be reached on 8:30am-5:30pm Alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (703) 308-6739. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Eugene Yun  
Examiner  
Art Unit 2682

EY

  
VIVIAN CHIN  
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